

REMARKS

I. Introduction

Upon entry of the present amendment, claims 1-10 and 12 will be pending in this application. Claim 11 has been cancelled. Claims 1, 10 and 12 have been amended to clarify features of the invention. Support for these amendments can be found in the specification, including, among other places, specification ¶¶ 0003, 0022, 0025, 0025 and the figures. No new matter has been added.

Based on the following remarks, Applicants respectfully request reconsideration and allowance of the pending claims.

II. Rejections based on 35 U.S.C. § 112

The Examiner has rejected claims 1-9 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully traverses this rejection and requests reconsideration and withdrawal thereof.

Claim 1 has been amended to delete reference to “wing.” For these reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

III. Rejections based on 35 U.S.C. § 103

A. Claims 1-3 and 9: Pozzo

The Examiner has rejected claims 1-3 and 9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,899,252 to Pozzo. Applicants respectfully traverse these rejections and request reconsideration and withdrawal thereof.

MPEP §2141, (pages 2100-116 and -117) explains what is required where an obviousness rejection is made:

As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (A) Determining the scope and content of the prior art; and
 - (B) Ascertaining the difference between the claimed invention and the prior art; and
 - (C) Resolving the level of ordinary skill in the pertinent art.
- Objective evidence relevant to the issue of obviousness must be evaluated by Office personnel. . . .

Office personnel fulfill the critical role of fact finder when resolving the *Graham* inquiries. . . . Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied. . . .

Once the findings of fact are articulated, Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C. 103. 35 U.S.C. 132 requires that the applicant be notified of the reasons for the rejection of the claim so that he or she can decide how best to proceed.

The Office Action does not comply with these requirements, at least because the Action does not resolve the level of ordinary skill in the pertinent art.

Pozzo is a “panel raising” router bit useful to form a traditional profile on the edge of a panel used in “frame and panel” structure. This Pozzo structure might be used in a panel to be received in a groove formed using the claimed router bit, but the Pozzo router bit cannot be used to form the desired groove in a box or frame that is the object of the present invention. The foregoing claim amendments now require a bit for cutting a groove having a flat groove bottom and two groove sides at right angles to the groove bottom. These

limitations unquestionably distinguish over the Pozzo reference, which cutter cannot be used to cut a groove having the recited shape.

KSR and MPEP guidelines require that, "Once the findings of fact are articulated, Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C 103." MPEP 2141.

The Office Action asserts that the bearing and cutting size relationship required by the claim "would be an obvious matter of design choice," and sets forth the citations and descriptions of two cases mentioned in MPEP 2144.04 (IV)(A), *In re Rose* and *Gardner v. TEC Systems, Inc.* The MPEP section containing the Office Action language reads as follows:

A. Changes in Size/Proportion

In *re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In *re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

In re Rose is inapplicable to the pending claims, because the limitations are not ones merely pertaining to size *per se*; they are limitations pertaining to *relative* dimensions. However, unlike the *Gardner case*, the claimed relative dimensions *do* cause the claimed

device (and method) to perform differently than the prior art router cutters of record, and this “criticality to these dimensions¹” is positively set forth in detail in the Specification. For instance:

The slotting cutters of this invention have **diametric proportions** that allow a 1/8” to 3/16” slot to be cut with a sufficiently small radius at corners to produce a continuous slot around the inside of a frame or box corner.

Specification ¶ 0003 (emphasis added); see also specification ¶¶ 0020 and 0021.

None of the prior art slotting cutters of record in this case allow a slot on the order of 1/8” to 3/16” deep to be cut with a sufficiently small radius at corners to produce a continuous slot around the inside of a frame or box corner. Accordingly, the claimed device performs differently than the prior art. Moreover, applicant and the undersigned attorney believe that the relative router bit component sizes needed to accomplish this are not self-evident or “intuitively” (or otherwise) obvious to persons of ordinary skill in the art.

In addition to saying that the relative size claim limitations “would be an obvious matter of design choice,” the Office Action asserts that “mere selection or calculation of an optimal size/dimension of the radii of both the cutter and guide bearing are well within the general knowledge of a skilled artisan in the art and are not non-obvious.” However, the Action does not provide any explanation or support for these assertions, and Applicant’s assignee respectfully disagrees. More specifically, Applicant’s assignee does not believe that the claimed relative dimensions are “an optimal size/dimension.”² The claimed relative

¹ Office Action, p. 4, line 12.

² If there is an “optimal size/dimension,” what is it? The independent claims do not specify any particular size or dimensions, demonstrating that the invention is not about particular sizes or dimensions but rather about particular *relative* dimensions of a router cutter.

dimensions enable accomplishment of a particular desired operation not possible using the prior art of record, but there is not a single “optimal” size or dimension that would motivate those skilled in the art to choose the claimed *relative* dimensions. Accordingly, “optimization” would not be a motivation or an explanation making it obvious to create the claimed subject matter.

While the undersigned attorney believes there is no requirement that the reasons for claimed structure be set forth in the claims, the Office Action seems to suggest a “positively recited criticality to the dimensions of the router cutter,”³ so the foregoing amendments nevertheless incorporate the reason the claimed structure is distinguishable over the prior art. Claim 1 now recites:

so that a groove cut using the router cutter on the inside of the assembled square or rectangular frame or box will be continuous and the entire peripheral edge of a panel having a peripheral edge can be received within the frame or box

Similarly, Claim 10 now recites:

wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2 so that a groove cut using the router cutter on the inside of the assembled square or rectangular frame or box will be continuous.

Claim 12 now reads:

wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2 so that a groove cut using the router cutter on the inside of the assembled frame will be continuous.

³ Office Action page 4: In the absence of an [sic] positively recited criticality to the dimensions of the router cutter discovering or determining these values would result from routine engineering practices and required only routine skill in the art [sic] and therefore in itself does not warrant patentability.” As is explained in the Specification of the present application and in the remarks above, router cutters incorporating the relative dimensions or proportions claimed function differently from prior cutters.

In summary, the Office Action does not set forth a valid reason that the claimed subject matter would have been an obvious combination or modification of the art of record, and the claims have been amended to distinguish over the art of record, taken singly or in combination. Accordingly, Applicant's assignee respectfully requests reconsideration of claims 1-3 and 9 as amended and allowance of those claims.

A. Claims 10-12: Vaughan in view of Hansen

The Office Action rejected claims 10, 11 and 12 as follows:

Claim 10 and claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over B.S. Vaughan (1,933,232) in view of Hansen (4,505,086) as noted in the previous Office Action. Vaughan discloses a method of cutting a groove to receive a panel in a frame having a plurality of members comprising: a preparing the frame members, temporarily assembly the frame members into the frame manipulating one of the frame or router to cut a continuous groove inside the frame (fig. 2) using a router cutter (25) while contacting the inside face of the frame with an arcuate bearing surface having an arcuate radius R with the arc centered on the cutter axis of rotation (fig. 4). Vaughan does not disclose preparing the frame members by forming joint elements. Hansen teaches in a closely related art a method of cutting a groove in a panel wherein frame members are prepared by forming joint elements in the end of the frame (figs. 9, 11). Because the references are from closely related art, it would have been obvious at the time of the invention to one having ordinary skill in the art to construct Vaughan's frame members by forming joint elements on the end of the frame so as to form the frame as taught by Hansen.

Applicant's assignee respectfully traverses these rejections and requests that claims 10 and 12 be reconsidered as amended and allowed for at least the following reasons. Claim 11 has been cancelled solely because of its close similarity to claim 10.

Vaughan does not disclose "temporarily assembly [sic] the frame members." Vaughan teaches a frame "secured together at the corners preferably by means of corrugated nails 21 near the insides." Corrugated nails are not temporary fasteners; indeed it is very difficult to remove corrugated nails without damaging one or both of the work pieces fastened by them.

Vaughan does not disclose use of a router cutter. The tool depicted in Vaughan is instead “a shaper carrying a rotary cutter 25 on a vertical spindle 26.” Vaughan page 1, lines 65-66.

Vaughan does not disclose cutting a groove “while contacting the inside face of the frame with an arcuate bearing surface having an arcuate radius R with the arc centered on the cutter axis of rotation (fig. 4).” The “bearing surface” of sleeve 27 in Vaughan contacts not the frame but a template:

The assembled frame pieces are next placed in a template having vertical flanges 22 and base flanges 23 which are a little wider than the frame pieces and present straight inside edges having rounded corners. The template carrying the frame is placed on the table 24 of a shaper . . . The inside edges of the template parts 23 bear against the sleeve 27 as the frame is moved about the cutter At the corners, the rabbet is rounded on the same center of curvature as the curved corner portions of the template part 23.

Vaughan page 1, lines 60-76. Thus, the bearing surface provided by sleeve 27 in Vaughan does not contact the frame; it contacts a template that controls the cutter path, and, as depicted in Figure 4, the rabbet has very little depth at the frame corner.

Vaughan teaches cutting a rabbet having an L-shaped cross-section having a bottom and a side. As required by amended claims 10 and 12, Vaughan does not teach cutting a continuous groove comprising a flat groove bottom and two groove sides at right angles to the groove bottom.

As noted by the Office Action, “As to the recitation, wherein the cutting diameter of the router cutter is larger than the product of the radius R multiplied by the square root of 2, neither Vaughan nor Hanson disclose such.”

After the foregoing admission that neither Vaughan nor Hanson teach the claimed subject matter, the Action goes on to say:

The relative calculation requiring, [sic] the cutting diameter of the router cutting [sic] to be larger than the product of the radius R multiplied by the square root of 2, merely as size relative dimension. Because no specific sizes of the radius of either the guide bearing or the router cutter have been positively recited or defined within the written disclosure, Applicant has not set forth any criticality to the size of there [sic] elements. Instead, Applicant has only stated that there is a relative size dimension between the two, i.e. the guide bearing and the router cutter. Such relative size dimensions are obvious and well known in the art so as to facilitate groove/bevel/chamfer and joint cutting and shaping.

These assertions simply are not correct. As explained above, the present application does set forth the “criticality” of the relative sizes of the elements of the claimed subject matter, and it does explain both the relative size dimensions and specific, practical dimensions exemplary of the claimed **relative** size dimensions of the invention. See, e.g., ¶¶ 0003, 0004, 0005, 0021-0025 and claims 3-6, all of which claims recite dimensions. “Such relative size dimensions” are not “well known in the art so as to facilitate groove/bevel/chamfer and joint cutting and shaping.” The claimed relative size dimensions are not disclosed by the art of record, suggesting they are not “well known in the art” and the Action does not identify any reasons they would be obvious.

CONCLUSION

Applicant's assignee and the undersigned attorney believe the amendments and remarks above completely respond to the outstanding rejections and that the application is now in condition for allowance. Such action is respectfully requested.

If the Examiner believes any informalities remain in the application that may be corrected by Examiner's Amendment, or there are any other issues that can be resolved by telephone interview, a telephone call to the undersigned attorney at (404) 815-6188 is respectfully solicited.

Respectfully submitted,

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